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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/527,528	03/11/2005	Toshiyuki Tsubouchi	267014US0PCT	7444

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EXAMINER	
MCAVOY, ELLEN M	

ART UNIT	PAPER NUMBER
1797	

NOTIFICATION DATE	DELIVERY MODE
05/19/2010	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/527,528	TSUBOUCHI ET AL.	
	Examiner	Art Unit	
	Ellen M. McAvoy	1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 February 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-26* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *2/22/2010*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-10 and 16-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshida et al in combination with Holubec (4,162,985) or in combination with Matsuno et al (6,191,330).

Applicants' arguments filed 22 February 2010 have been fully considered but they are not persuasive. As previously set forth, Yoshida et al ["Yoshida"] disclose derivatives of bicyclo[2.2.1]heptane useful as traction drive fluids, represented by formula (VII) in column 2, which have a high traction coefficient under high temperatures and an excellent viscosity characteristic under low temperatures. Yoshida teaches that the traction drive fluids have the following properties: (a) molecular weight of 210 or larger, (b) kinematic viscosity at 40°C of 10-25 mm^2/s, (c) viscosity index of 60 or higher, (d) pour point of –40°C or lower, (e) density at 20°C of 0.93 g/cm^3 or higher, and (f) traction coefficient at 140°C of 90% or higher of the coefficient of 2,4-dicyclohexyl-2-methylpentane. See column 3, lines 1-21. Yoshida also teaches that the traction drive fluids include the hydrogenated dimers of bicyclo [3,2,1] octane ring compounds, bicyclo [3,3,0] octane ring compounds and bicyclo[2,2,2] octane ring compounds. See column 8, lines 58-64 and column 10, lines 17-58. The examiner maintains the position that the traction drive fluids of Yoshida meet the limitations of base oil component (A) of the claims which has been amended to specific base oils for traction drives including the

above recited base oils. Applicants' invention differs from Yoshida by adding component (B), a hydrocarbon polymer having a weight average molecular weight in the range of 8,000 to 40,000 which comprises as a constituent at least 10 mole % of a monomer bearing a cyclic structure and hydrogenated products thereof, which acts as a viscosity index improver to the traction drive fluid. However, Yoshida allows for the addition of conventional additives to the traction drive fluid including viscosity index improvers. See column 11, lines 45-50. Holubec is added to teach that hydrogenated interpolymers of at least one monovinyl arene and at least one C_4-C_6 conjugated diene or at least one C_2-C_6 alpha-olefin may be used as additives in lubricating oil compositions. The interpolymers have a number average molecular weight of about 750 to about 10,000. Suitable monovinyl arenes include styrene, methyl-styrene and vinyl naphthalene. Suitable C_2-C_6 alpha-olefins include ethylene, propylene, n-butene-1, n-hexene, etc. See col. 4, line 37 to column 5, line 25. Thus the examiner is of the position that Holubec meets the limitation of component (B) which has a molecular weight overlapping this range. Matsuno et al ["Matsuno"] is added to teach that viscosity index improvers for traction drive fluids include polyalkylstyrenes. See column 12, lines 13-19. The examiner is of the position that Matsuno meets the limitation of component (B) of the claims which may be a polymer of a monomer bearing a cyclic structure.

Having the prior art references before the inventors at the time the invention was made it would have been obvious to have added an additional polymeric viscosity modifier such as the styrene copolymer component disclosed in Holubec or the polyalkylstyrene viscosity index improver disclosed in Matsuno to the traction drive fluid of Yoshida. The examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior

art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the motivation relied on by the examiner is the disclosure in Yoshida allowing for the addition of other additives to the traction drive fluid including viscosity index improvers.

Response to Arguments

In the response filed previously, applicants argued that the obviousness rejection should be withdrawn on the basis of a superior and unexpected result. The results presented in the Declaration under 37 C.F.R. 1.132 and in the instant specification have been carefully considered; however, the examiner is of the position that the data fails to rebut the established *prima facie* case of obviousness for several reasons. First, all of the claims at issue are drawn to a traction drive fluid composition and NOT to a method of using the composition in a transmission such as a continuously variable transmission (CVT). Thus the claimed compositions are not required to be used in any particular environment such as in a CVT where there are allegedly superior results in the property of traction coefficient. Second, in reference to Matsuno, applicants argue that the addition of a viscosity index improver to the traction drive fluid component (A) results in the lowering of the traction coefficient by about 7% (0.085 to 0.079) at most with PMA (polymethacrylate) as component D, and results in the lowering of the traction coefficient by about 1% (0.085 to 0.084) with PIB and OCP as component D. In contrast, applicants argue, the addition of component (B) to the base oil (A) of claim 1 does not lower the traction coefficient of the base oil (A), and in some cases, actually raises the traction

coefficient. The results set forth in the Declaration show that the traction coefficient @ 140°C remained at 0.077 by the addition of polymers I, II, III, IV in Table 1-1; and the traction coefficient @ 140°C remained at 0.070 by the addition of polymers I, II, III, IV in Table 1-2. However, the examiner is not convinced that the results presented are unexpected to the skilled worker in the art which is what is needed to rebut the established *prima facie* case. The examiner is of the position that of course completely different viscosity index improvers are going to affect the traction coefficient of the traction drive fluid represented by component (A). The examiner is of the position that the approximately 1% difference reported in Matsuno for two different viscosity index improvers versus the 0% difference for the claimed viscosity index improvers in the property of traction coefficient does not rise to the level of superior and unexpected results as argued.

In the response filed 22 February 2010, applicants traversed the obviousness rejection on the basis of a superior and unexpected result. Applicants argued that in a continuously variable transmission (CVT), the efficiency of the power transfer between two surfaces in a CVT is quantified by the traction coefficient. The higher the traction coefficient, the more efficient the power transfer. Applicants argued that Matsuno, in both tabular and in words, acknowledges that by adding a viscosity index improver to a fluid lowers the traction coefficient of the fluid. Applicants point to Table 3 of Matsuno where three viscosity index improvers, namely polymethacrylate (PMA), polyisobutylene (PIB) and olefin copolymer (OCP) are tested, and the results showed that the traction coefficient was lowered. Applicants argued that one of ordinary skill in the art, based on the teachings of Matsuno, Holubec and Yoshida, would expect that the addition of a viscosity index improver to a base oil would undesirably lower the traction

coefficient of the base oil. These arguments are not persuasive of the patentability of the claimed composition. First, as argued above, claims 1-20 are drawn towards a composition and NOT to a method of using the composition in a CVT. Second, as also stated above, Matsuno is relied on to teach that applicants' preferred component (B), a polyalkylstyrene, may be used as a viscosity index improver in transmission fluids. Table 3 in Matsuno does not include polyalkylstyrene as one of the viscosity index improvers. The disclosure of Matsuno is not limited to the examples set forth, but broadly to what is taught in the specification to one of ordinary skill in the art. Matsuno clearly teaches that polyalkylstyrenes are effective as viscosity index improvers in traction drive fluids suitable for use in continuously variable transmissions (CVT).

Claim Rejections - 35 USC § 103

Claims 1-10 and 16-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Abe et al (5,283,384) in combination with Holubec (4,162,985) or in combination with Matsuno et al (6,191,330).

Applicants' arguments filed 22 February 2010 have been fully considered but they are not persuasive. As previously set forth, Abe et al ["Abe"] disclose a traction drive fluid composition comprising a hydrocarbon having a bicyclo octane skeleton such as bicyclo[3,2,1] octane, bicyclo [2,2,2] octane and bicyclo[3,3,0] octane. Abe teaches that the traction drive fluids may contain a hydrogenated dimer or co-dimer of the bicyclo octanes. See column 5, lines 52-59. The examiner maintains the position that the traction drive fluids of Abe meet the limitations of base oil component (A) of the claims which has been amended to specific base oils for traction drives including the above recited base oils. Applicants' invention differs from Abe

by adding component (B), a hydrocarbon polymer having a weight average molecular weight in the range of 8,000 to 40,000 which comprises as a constituent at least 10 mole % of a monomer bearing a cyclic structure and hydrogenated products thereof, which acts as a viscosity index improver to the traction drive fluid. However, Abe allows for the addition of conventional additives to the traction drive fluid including viscosity index improvers. See column 11, lines 22-58. Holubec is added to teach that hydrogenated interpolymers of at least one monovinyl arene and at least one C_4-C_6 conjugated diene or at least one C_2-C_6 alpha-olefin may be used as additives in lubricating oil compositions. The interpolymers have a number average molecular weight of about 750 to about 10,000. Suitable monovinyl arenes include styrene, methyl-styrene and vinyl naphthalene. Suitable C_2-C_6 alpha-olefins include ethylene, propylene, n-butene-1, n-hexene, etc. See column 4, line 37 to column 5, line 25. Thus the examiner is of the position that Holubec meets the limitation of component (B) which has a molecular weight overlapping this range. Matsuno et al ["Matsuno"] is added to teach that viscosity index improvers for traction drive fluids include polyalkylstyrenes. See column 12, lines 13-19. The examiner is of the position that Matsuno meets the limitation of component (B) of the claims which may be a polymer of a monomer bearing a cyclic structure.

Having the prior art references before the inventors at the time the invention was made it would have been obvious to have added an additional polymeric viscosity modifier such as the styrene copolymer component disclosed in Holubec or the polyalkylstyrene viscosity index improver disclosed in Matsuno to the traction drive fluid of Abe. As set forth above, the motivation to make the combination relied on by the examiner is the disclosure in Abe allowing

for the addition of other additives to the traction drive fluid including hydrocarbon oils and viscosity index improvers.

Applicants argument that the obviousness rejection should be withdrawn on the basis of superior and unexpected results has been fully addressed above.

Claim Rejections - 35 USC § 103

Claims 1-6 and 11-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murai et al (4,889,649) in combination with Holubec (4,162,985) or in combination with Matsuno et al (6,191,330).

Applicants' arguments filed 22 February 2010 have been fully considered but they are not persuasive. As previously set forth, Murai et al ["Murai"] disclose a traction drive fluid containing, as a base stock, a composition composed of 40 to 80 weight % of a 2,4-dicyclohexyl-2-methylpentane and 20 to 60 weight % of a mixture of polycyclohexylalkane and a perhydroindane derivative. The examiner maintains the position that the traction drive fluids of Murai meet the limitations of base oil component (A) of the claims which has been amended to specific base oils for traction drives including the above recited base oils. Applicants' open-ended claim language "comprising" allows for the addition of other additives to the composition including the mixture of polycyclohexylalkane and a perhydroindane derivative disclosed in Murai. Applicants' invention differs from Murai by adding component (B), a hydrocarbon polymer having a weight average molecular weight in the range of 8,000 to 40,000 which comprises as a constituent at least 10 mole % of a monomer bearing a cyclic structure and hydrogenated products thereof, which acts as a viscosity index improver to the traction drive

fluid. However, Murai allows for the addition of conventional additives to the traction drive fluid including polyisobutylene and its hydrogenated product as viscosity index improvers. See column 5, lines 18-35. Holubec is added to teach that hydrogenated interpolymers of at least one monovinyl arene and at least one C_4-C_6 conjugated diene or at least one C_2-C_6 alpha-olefin may be used as additives in lubricating oil compositions. The interpolymers have a number average molecular weight of about 750 to about 10,000. Suitable monovinyl arenes include styrene, methyl-styrene and vinyl naphthalene. Suitable C_2-C_6 alpha-olefins include ethylene, propylene, n-butene-1, n-hexene, etc. See column 4, line 37 to column 5, line 25. Thus the examiner is of the position that Holubec meets the limitation of component (B) which has a molecular weight overlapping this range. Matsuno et al ["Matsuno"] is added to teach that viscosity index improvers for traction drive fluids include polyalkylstyrenes. See column 12, lines 13-19. The examiner is of the position that Matsuno meets the limitation of component (B) of the claims which may be a polymer of a monomer bearing a cyclic structure.

Having the prior art references before the inventors at the time the invention was made it would have been obvious to have added an additional polymeric viscosity modifier such as the styrene copolymer component disclosed in Holubec or the polyalkylstyrene viscosity index improver disclosed in Matsuno to the traction drive fluid of Murai. As set forth above, the motivation to make the combination relied on by the examiner is the disclosure in Murai allowing for the addition of other additives to the traction drive fluid including hydrocarbon oils and viscosity index improvers.

Applicants argument that the obviousness rejection should be withdrawn on the basis of superior and unexpected results has been fully addressed above.

THIS ACTION IS MADE FINAL. Applicants are reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ellen M. McAvoy whose telephone number is (571) 272-1451. The examiner can normally be reached on M-F (7:30-5:00) with alt. Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ellen M McAvoy/
Primary Examiner
Art Unit 1797

EMcAvoy
May 11, 2010